

Ring Pickavance.

191/226/15

14th March, 1958

N.I.(G.P.)(58) First Meeting

NATIONAL INSTITUTE FOR RESEARCH IN NUCLEAR SCIENCE

GENERAL PURPOSES COMMITTEE

Minutes of the meeting of the General Purposes Committee held in the Board Room, Treasury Buildings, Whitehall at 2.30 p.m. on Monday, 24th February, 1958.

Present:

Lord Bridges (in the Chair)
Mr. P. Bowles
Mr. D. W. Fry
Professor R. E. Peierls
Sir Donald Perrott
Dr. T. G. Pickavance
Professor D. H. Wilkinson
Mr. P. J. Searby
Dr. J. A. V. Willis (Secretary)

1. MINUTES OF THE LAST MEETING

The Committee approved the minutes of the 1957 2nd meeting subject to correction of the figure given at the end of minute 8 for the nominal price for the magnet steel to £70 per ton.

With regard to action (2) Dr. Pickavance reported that Messrs. Chivers' contract was now at a price independent of the amount of imported labour.

With regard to action (8) Dr. Pickavance reported that a fixed crane could not be provided but that the Project Committee after re-consideration considered that portable lifting plant, together with hoists suspended from the roof, would be satisfactory. Professor Wilkinson agreed.

With regard to action (9) Dr. Pickavance said that he had re-examined the proposals for air-conditioning plant and found them satisfactory. The contract had not yet been placed, but this was because of delay in the building programme.

Mr. Bowles said that co-operation with the Factory Inspectorate had been established on the lines practised by the A.E.R.E. An inspector had already visited the site for discussion.

2. QUESTIONS DEALT WITH BY CORRESPONDENCE

The Committee noted that the recommendation to place the ferrite contract with Messrs. Phillips, referred to them in paper NI(GP)(57)9, and the recommendation to amend Messrs. Sankey's contract for the magnet yoke, referred to them in paper NI(GP)(58)1, had both been unanimously agreed by the members of the Committee, and approved on their behalf by the Chairman.

3. QUARTERLY FINANCIAL STATEMENT BY THE PROJECT COMMITTEE

The Committee had before them the quarterly statement NI(GP)(58)2.

The Chairman pointed out that the cost of the ancillary building, now included in the estimate, would have to be sanctioned by the Treasury at the proper time. Sir Donald Perrott agreed that this was a matter for the A.E.A.

The Chairman asked whether the anticipated under-spending of the estimate by £180,000 on plant in 1957/58 would cause difficulty in the following year. Mr. Fry said that to improve the position slightly, and to take advantage of the present low price of copper, it was suggested that the raw copper for the magnet coils should be bought promptly. The 300 tons required could be bought now at about £164/ton for forward delivery. This suggestion met with general approval. Dr. Pickavance said that there did not appear to be any other items which could profitably be bought and paid for in 1957/58. However, he believed that the 1958/59 estimate would prove to be adequate.

Sir Donald Perrott said that the Treasury had not cut the Institute's 1958/59 budget, but that no increase in it would be possible. Moreover, the Treasury had taken the forecasts of capital expenditure in 1959/60 made by Departments last year as limits which could not be exceeded either.

Secretary's Note:- The forecasts for 1959/60 made last Autumn by the AEA included figures for estimated National Institute expenditure which have not previously been reported to the Committee. The figures are:-

<u>Sub-head B.7</u>		<u>Estimates 1958/59</u>	<u>Forecast 1959/60</u>
		£000	£000
<u>Recurrent expenditure:</u> Salaries		10	10
	AEA services	350	495
<u>Non-recurrent:</u> Buildings		990	1135
	Plant	1425	1700

To compare with the last line of the above table, the current estimate of the rate of expenditure on plant is:-

<u>£000 1958/59</u>	<u>£000 1959/60</u>
1128	2340

Dr. Pickavance said that he had reviewed with the AERE the probable rate of actual bill-paying, and had been assured that the planned rate of progress in 1959/60 would not have to be slowed down for lack of money. The faster the progress in 1958/59, of course, the better.

The Committee:-

- (1) Approved the purchase of 300 tons of raw copper at approximately £164 per ton.

4. POWER SUPPLY FOR THE 7 GeV PROTON SYNCHROTRON

The Committee had before them the recommendation of the Project Committee, paper NI(GP)(58)3.

Dr. Pickavance introduced the paper. He pointed out that Brown Boveri had quoted for the convertor plant and the rotary plant, together or separately. BTH were the only other firm able to quote for the convertor plant and they were only prepared to make a single quotation for the whole power supply at a price about £250,000 higher than that of Brown Boveri after allowing for import duty. Further, although their design appeared technically sound a contract could not be placed with them until their design of ignitron had been proved to be successful.

With regard to the rotary plant, Dr. Pickavance said that the English Electric tender was technically preferable to that of Brown Boveri. The English Electric machines were larger and had more reserve to meet a possible future demand for extra power. For example they were not hydrogen cooled like the Brown Boveri machines, but were of a type which could be converted easily to hydrogen cooling. The G.E.C. tender was similar to that of English Electric, but inferior in minor respects.

The following points were made in discussion:

- (a) As far as possible it had been confirmed that Brown Boveri and English Electric would co-operate, under the leadership of the former. A meeting with the two firms together to discuss this could be arranged once the contract for the convertor plant was placed. The disadvantages of having two firms co-operating in this way were recognised, but Brown Boveri and English Electric had co-operated before. Also, even within Brown Boveri, the convertor plant was made at Baden and the rotary plant controlled at Mannheim, and in the case of the C.E.R.N. contract the co-operation between the two factories had been poor.
- (b) The recommendation to split the contract was made for technical, not currency reasons. Nevertheless currency reasons might have made it necessary in any case.
- (c) After adjustment of the tender for the rotary plant to a common basis the English Electric tender is slightly higher than that of the G.E.C. The Project Committee consider the English Electric tender to be technically preferable.
- (d) As the design of the combined scheme is developed in detail by the two firms, many technical difficulties will have to be overcome, and some amendment to the contracts may be necessary.
- (e) The difference between the sum of the tenders which it is desired to accept, and the total estimate, represents items which will still have to be provided, for example concrete block foundations.

The Committee:-

- (2) Took note of paper NI(GP)(58)3.
- (3) Approved the proposal to place with British Brown-Boveri Ltd. the contract for the convertor plant, using British transformers, at a cost of £560,000.
- (4) Approved the proposal to place with the English Electric Co. the contract for the rotary plant at a cost of £440,000 subject to the satisfactory outcome of discussions between A.E.R.E., Brown Boveri and English Electric about co-operation.
- (5) Agreed to leave the balance of the £1,000,000 estimate for the power supply (i.e. £100,000) in reserve against items not included in the tenders, and for variations which may be found necessary as the detailed design of the combined scheme develops.
- (6) Authorised the Project Committee to use the first £25,000 of this reserve at its discretion.

5. ADDITIONAL EARTH SHIELDING

The Committee had before them the recommendation of the Project Committee, paper NI(GP)(58)4.

Dr. Pickavance said that after a visit from Dr. Lindenbaum of Brookhaven

he now considered that the additional 10 ft. of earth shielding would eventually be required. To add it at the beginning would save £8,600 and would simplify the adjustment of levels of the equipment.

Sir Donald Perrott raised the question how the Institute would form its safety policy. Dr. Pickavance said that he had advice from the Chief Radiological Safety Office at Harwell on the levels of exposure allowable, and from foreign experts on the radiation to be expected from the proton synchrotron. Sir Donald Perrott said that if only as a point of presentation, the opinion of British experts should be sought on the latter too. Professor Peierls said that in operation, the main difficulty will be to make radiation surveys in such a way as to cover all the possibilities of danger. The Chairman said that a safety paper on the machine would have to be written.

The Committee:-

- (7) Approved the proposal to increase the earth shielding by 10 feet at a cost of £25,000 within the term of the present Civil Engineering Contract.
- (8) Invited Dr. Pickavance to prepare a safety paper on the proton synchrotron, for the Physics Committee, and through them for the Board.

6. APPROVAL OF VISITS

The Committee had before them a note by the Secretary NI(GP)(58)5.

The Chairman said that Sir Philip Morris had written to suggest that a sum of money for visits should be budgeted in advance. The Chairman agreed that there should be some limit, but did not wish to adopt too rigid rules at this stage.

Sir Donald Perrott said that the A.E.A. would certainly expect to decide what travelling was necessary in work which they did for the Institute.

Professor Wilkinson asked if the proposals in the paper were meant to include travelling by University staff on Institute business. The Committee agreed that any such cases should be referred to them.

The Committee:-

- (9) Took note of paper NI(GP)(58)5.

7. NEXT MEETING

The Committee agreed to hold their next meeting at 2.45 p.m. on Friday May 23rd.

A.E.R.E. Harwell
March, 1958.
H.36952

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